

WHAT IS CLAIMED IS:

1. A gimbal, comprising:
  - an attachment portion adapted to be connected to a suspension;
  - a head support structure spaced apart from the attachment portion and adapted to support a head;
  - a first strut connected to the attachment portion and the head support structure, the first strut having an increased center portion and two end portions on opposite sides of the center portion, the center portion having a greater thickness than the two end portions; and
  - a second strut spaced apart from the first strut and connected to the attachment portion and the head support structure and having an increased center portion and two end portions on opposite sides of the center portion, the center portion having a greater thickness than the two end portions.
2. The gimbal of claim 1 wherein the first strut further includes:
  - a first end support portion and a second end support portion positioned proximate the attachment portion and the head support structure, respectively, and wherein the first end support portion and the second end support portion have a greater thickness than the two end portions; andwherein the second strut further includes:

a first end support portion and a second end support portion positioned proximate the attachment portion and the head support structure, respectively, and wherein the first end support portion and the second end support portion have a greater thickness than the two end portions.

3. The gimbal of claim 1 wherein the two end portions of the first strut include a layer of steel and the increased center portion of the first strut includes a layer of steel, a layer of copper and a layer of polyimide and wherein the two end portions of the second strut include a layer of steel and the increased center portion of the second strut includes a layer of steel, a layer copper and a layer of polyimide.

4. The gimbal of claim 1 wherein the center portion of the first strut and the center portion of the second strut both have a length of about 3 times the length of each end portion.

5. The gimbal of claim 1 wherein the increased center portion of the first strut and the increased center portion of the second strut have a thickness at least 25% greater than the thickness of the two end portions.

6. The gimbal of claim 1 wherein the increased center portion of the first strut has a greater depth than the two end portions of the first strut and wherein the increased center portion of the second strut has a greater depth than the two end portions of the second strut.

7. The gimbal of claim 1 wherein the increased center portion of the first strut has a greater width than the two end portions of the first strut and the increased center portion of the second strut has a greater width than the two end portions of the second strut.
8. The gimbal of claim 7 wherein the center portion of the first strut and the center portion of the second strut have a width of at least twice the width of the end portions.
9. The gimbal of claim 1 wherein the increased center portion of the first strut has a greater stiffness than the two end portions of the first strut and the increased center portion of the second strut has a greater stiffness than the two end portions of the second strut.
10. A suspension assembly comprising:
  - the gimbal of claim 1;
  - a suspension attached to the attachment portion of the gimbal; and
  - a head attached to the head support structure and supported by the gimbal.
11. A data storage system comprising:
  - the suspension assembly of claim 10; and
  - a storage medium, wherein the suspension assembly supports the head above the storage medium.
12. A gimbal comprising:

an attachment portion adapted to be connected to a suspension;  
a head support structure spaced apart from the attachment portion and adapted to support a head; and  
a pair of struts connecting the attachment portion and the head support structure, the pair of struts including means for increasing resistance to buckling.

13. The gimbal of claim 12 wherein the means for increasing resistance to buckling includes, for each of the pair of struts, a center portion and two end portions, the center portion having a greater stiffness than the two end portions.

14. The gimbal of claim 12 wherein the means for increasing resistance to buckling includes, for each of the pair of struts, an increased center portion and two end portions, the increased center portion having a greater thickness than the two end portions.

15. The gimbal of claim 14 wherein each of the pair of struts further include a first end support portion and a second end support portion positioned proximate the attachment portion and the head support structure, respectively, and wherein the first end support portion and the second end support portion have a greater thickness than the two end portions.

16. The gimbal of claim 12 wherein the means for increasing resistance to buckling include a layer of steel, a layer of copper and a layer of a polyimide.

17. The gimbal of claim 14 wherein, for each of the pair of struts, the increased center portion has a greater depth than the two end portions.

18. The gimbal of claim 14 wherein, for each of the pair of struts, the increased center portion has a greater width than the two end portions.

19. The gimbal of claim 18 wherein the increased center portion of the first strut and the increased center portion of the second strut have a width of at least two times the width of the respective end portions of the struts.

20. The gimbal of claim 19 wherein the increased center portion of the first strut and the increased center portion of the second strut have a length of about three times the length of the respective end portions of the struts.

21. A gimbal comprising:  
an attachment portion;  
a head support structure; and  
a pair of struts that connect the attachment portion and the head support structure, wherein each of the pair of struts includes a center portion and two end portions, the center portion having a greater stiffness than the two end portions.

22. The gimbal of claim 21 wherein each of the pair of struts further include:

a first end support portion and a second end support portion positioned proximate the attachment portion and the head support structure, respectively, and wherein the first end support portion and the second end support portion have a greater thickness than the two end portions.

23. The gimbal of claim 21 wherein the two end portions of each of the pair of struts include a layer of steel and the center portion of each of the pair of struts includes a layer of steel, a layer of copper and a layer of polyimide.

24. The gimbal of claim 21 wherein the center portion of each of the pair of struts have a length of about 3 times the length of each respective end portion.

25. The gimbal of claim 21 wherein the center portion of each of the pair of struts have a thickness at least 25% greater than the thickness of each respective end portion.

26. The gimbal of claim 21 wherein the center portion of each of the pair of struts has a greater depth than each respective end portion.

27. The gimbal of claim 21 wherein the center portion of each of the pair of struts has a greater width than each respective end portion.

28. The gimbal of claim 27 wherein the center portion of each of the pair of struts have a width of at least twice the width of each respective end portion.